TRANSMITTAL FORM	Application Number	09/579,736	**RECEIVED**
	Filing Date	May 26, 2000	**CENTRAL FAX CENTER**
	First Named Inventor	Christian Buchler et al.	
(to be used for all correspondence after initial filing)	Art Unit	2653	**MAY 0 2 2005**
	Examiner Name	Aristotelis M. Psitos	
Total Number of Pages in This Submission	Attorney Docket Number	PD980025	

ENCLOSURES   *(Check all that apply)*

- [✓] Fee Transmittal Form
  - [✓] Fee Attached
- [ ] Amendment/Reply
  - [ ] After Final
  - [ ] Affidavits/declaration(s)
- [ ] Extension of Time Request
- [ ] Express Abandonment Request
- [ ] Information Disclosure Statement
- [ ] Certified Copy of Priority Document(s)
- [ ] Response to Missing Parts/ Incomplete Application
  - [ ] Response to Missing Parts under 37 CFR 1.52 or 1.53

- [ ] Drawing(s)
- [ ] Licensing-related Papers
- [ ] Petition
- [ ] Petition to Convert to a Provisional Application
- [ ] Power of Attorney, Revocation Change of Correspondence Address
- [ ] Terminal Disclaimer
- [ ] Request for Refund
- [ ] CD, Number of CD(s) _____

- [ ] After Allowance communication to Technology Center (TC)
- [ ] Appeal Communication to Board of Appeals and Interferences
- [✓] Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
- [ ] Proprietary Information
- [ ] Status Letter
- [ ] Other Enclosure(s) (please Identify below):

Remarks

Reponse to Notice of Non-Compliant Appeal Brief mailled March 31, 2005

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Patricia A. Verlangieri, Attorney Thomson Inc.
Signature	*[signature]*
Date	May 2, 2005

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Typed or printed name	Patricia A. Verlangieri		
Signature	*[signature]*	Date	May 2, 2005

FEE TRANSMITTAL
for FY 2004

Effective 10/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT	($)	500

Complete if Known

Application Number	09/579,736
Filing Date	May 26, 2000
First Named Inventor	Christain Buchler et al.
Examiner Name	Aristotelis M. Psitos
Art Unit	2653
Attorney Docket No.	PD990025

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METHOD OF PAYMENT *(check all that apply)*

☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☒ Deposit Account:

Deposit Account Number	07-0832
Deposit Account Name	THOMSON LICENSING INC., Customer No. 24499

The Director is authorized to: *(check all that apply)*
☒ Charge fee(s) indicated below ☒ Credit any overpayments
☐ Charge any additional fee(s) during the pendency of this application
☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Fee ($)	Small Entity Fee Code	Fee ($)	Fee Description	Fee Paid
1001	790	2001	395	Utility filing fee	
1002	350	2002	170	Design filing fee	
1003	550	2003	265	Plant filing fee	
1004	790	2004	395	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1) ($) 0

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

	Extra Claims	Fee from below	Fee Paid
Total Claims	- = 0	X	= 0
Independent Claims	- = 0	X	= 0
Multiple Dependent		X	= 0

Large Entity Fee Code	Fee ($)	Small Entity Fee Code	Fee ($)	Fee Description
1202	18	2202	9	Claims in excess of 20
1201	88	2201	43	Independent claims in excess of 3
1203	300	2203	145	Multiple dependent claim, if not paid
1204	88	2204	43	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) 0

"or number previously paid, if greater. For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Fee ($)	Small Entity Fee Code	Fee ($)	Fee Description	Fee Paid
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet.	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	430	2252	210	Extension for reply within second month	
1253	980	2253	475	Extension for reply within third month	
1254	1,530	2254	740	Extension for reply within fourth month	
1255	2,080	2255	1,005	Extension for reply within fifth month	
1401	340	2401	165	Notice of Appeal	
1402	330	2402	165	Filing a brief in support of an appeal	500
1403	300	2403	145	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive – unavoidable	
1453	1,370	2453	665	Petition to revive – unintentional	
1501	1,370	2501	665	Utility issue fee (or reissue)	
1502	490	2502	240	Design issue fee	
1503	650	2503	320	Plant issue fee	
1460	130	1460	130	Petitions to the Director	
1807	50	1807	50	Processing fee under 37 CFR 1.17 (q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	790	2809	395	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	790	2810	395	For each additional invention to be examined (37 CFR § 1.129(b))	
1801	790	2801	395	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) _____

*Reduced by Basic Filing Fee Paid SUBTOTAL (3) ($) 500

SUBMITTED BY

Complete (if applicable)

Name (Print/Type)	Patricia A. Verlangieri	Registration No. (Attorney/Agent)	42,201	Telephone	(609) 734-6867
Signature				Date	May 2, 2005

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Serial No. 09/579,736   PD990025

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application   **RECEIVED**
                                                    CENTRAL FAX CENTER

Inventors   :   **Christian Buchler et al.**

Serial No.   :   **09/579,736**   MAY 0 2 2005

Filed   :   **May 26, 2000**

Title   :   **APPARATUS FOR SCANNING OPTICAL RECORDING
                   MEDIA USING A DIFFERENTIAL PHASE DETECTION
                   METHOD**

Examiner   :   **Aristotelis M. Psitos**

Art Unit   :   **2653**

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                                    Patricia A. Verlangieri
                                    Patricia A. Verlangieri

APPELLANTS' BRIEF UNDER 37 C. F. R. § 1.192

   On July 29, 2004, Appellants filed a timely Notice of Appeal (that was

received in the United States Patent and Trademark Office on July 29, 2004)

from the action of the Examiner finally rejecting pending claims 1-17. The

Appellants herein file this Brief in accordance with 37 C. F. R. § 1.192.

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1. IDENTIFICATION OF REAL PARTY IN INTEREST

The real party in interest for the above-identified application is Thomson Inc., which is the assignee of the assignee of record for this application, Deutsche Thomson-Brandt GmbH.

2. IDENTIFICATION OF RELATED APPEALS OR INTERFERENCES

To the best of appellants' knowledge, there are no appeals or interferences that will be directly affected by, or will have a bearing on the decision of this appeal.

3. STATUS OF THE CLAIMS

The above-identified application was filed on May 26, 2000 claiming priority under 35 U. S. C. § 119 to German Patent Application No. 199 24 733.1 filed May 31 1999. Claims 1-17 were pending. In a Preliminary Amendment filed on May 26, 2000 claims 1-17 were amended.

A first Office Action was mailed September 10, 2003 (Paper No. 7), in which claims 1-17 were rejected.

In appellants' response to the first Office Action, dated March 10, 2004, claims 1, 8, 14 and 17 were amended.

The Examiner in a second Office Action was mailed April 29, 2004 (Paper No. 9), finally rejected claims 1-17.

The status of the claims is as follows:

Twice amended claims 1, 8, 14 and 17. Once amended claims 2-7, 9-13 and 15-16. All claims stand finally rejected.

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4. STATUS OF THE AMENDMENTS

No amendments were made to the claims after final rejection. All amendments were entered.

5. SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 1 is directed to an apparatus for reading from or writing to optical recording media. See appellant's specification at page 1, lines 7-11. The apparatus includes a photodetector 10, a phase forming unit 13, an edge sequence detector 14 and a signal blocking unit 15. See appellant's specification at FIG. 1 and page 8, line 6 to page 9, line 16. The photodetector 10 includes at least two detector elements 10A, 10B, 10C, 10D. See appellant's specification at FIG. 1 and page 8, lines 23-32. The phase forming unit 13 detects a phase difference between output signals of the photodetector 10. See appellant's specification at page 9, lines 2-4. The edge sequence detector 14 detects a sequence of edges of the output signals of the photodetector. See appellant's specification at page 9, lines 4-8. The signal blocking unit 15, in response to the edge sequence detector 14, blocks output signals of the phase forming unit 13, when an impermissible sequence of edges is detected. See appellant's specification at page 9, lines 8-16.

Independent claim 10 is directed to a method for determining a correct track error signal using a phase detection method. See appellant's specification at page 1, lines 7-11. The method includes checking a sequence of zero crossings whose phases are detected with regard to impermissible sequence. See appellant's specification at page 9, lines 6-10. Thereafter, the outputting of a phase value is prevented when the impermissible sequence is detected. See appellants' specification at page 9, lines 10-16.

Dependent claim 11 is directed to a method for determining a correct track error signal using a phase detection method. See appellant's specification at

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page 1, lines 7-11. The method includes checking a sequence of zero crossings whose phases are detected with regard to impermissible sequence. See appellant's specification at page 9, lines 6-10. Thereafter, the outputting of a phase value is prevented when the impermissible sequence is detected. See appellants' specification at page 9, lines 10-16. The impermissible sequence is a sequence of more than two successive zero crossings of one of the signals without the occurrence of a zero crossing in another of the signals. See appellant's specification at page 4, lines 29-33.

Dependent claim 12 is directed to a method for determining a correct track error signal using a phase detection method. See appellant's specification at page 1, lines 7-11. The method includes checking a sequence of zero crossings whose phases are detected with regard to impermissible sequence. See appellant's specification at page 9, lines 6-10. Thereafter, the outputting of a phase value is prevented when the impermissible sequence is detected. See appellants' specification at page 9, lines 10-16. The impermissible sequence is a sequence of more than one pair of zero crossings within a predetermined time period, a pair of zero crossings consisting of a zero crossing of one of the signals and a succeeding zero crossing of another one of the signals. See appellant's specification at page 5, lines 9-16.

6. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1.   The Examiner has rejected claims 1-10, 13 and 17 as anticipated under 35 U. S. C. § 102(a) by Shiyuuichi (JP 10-198981).

2.   The Examiner has rejected claims 1-3, 6, 9, 10 and 17 as anticipated under 35 U. S. C. § 102(e) by Kuribayashi (U. S. 6,317,396).

3.   The Examiner has rejected claims 11-12 as being unpatentable under 35 U. S. C. § 103(a) over Shiyuuichi (JP 10-198981) in view of Kuribayashi (U. S. 6,317,396).

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4.   The Examiner has rejected claims 11-12 as being unpatentable under 35 U. S. C. § 103(a) over Kuribayashi (U. S. 6,317,396) in view of Koji (JP 10-208262).

7. ARGUMENT

1.   Rejection of claims 1-10, 13 and 17 under 35 U. S. C. § 102(a) over Shiyuuichi (JP 10-198981).

Claims 1-9

Shiyuuichi discloses a tracking signal detector. See Shiyuuichi in Abstract, Problem to be Solved, lines 1-3. The time sequence of a single signal is checked for 3T and 4T signals. See Shiyuuichi in Abstract, Solution, lines 1-7. The tracking signal is annulled when 3T and 4T signals with low signal-to-noise ratios are detected. See Shiyuuichi in Abstract, Solution, lines 7-10.

In appellant's claims 1-9, an apparatus is described for reading from or writing to optical recording media. See appellant's specification at page 1, lines 7-11. The apparatus includes a photodetector 10, a phase forming unit 13, an edge sequence detector 14 and a signal blocking unit 15. See appellant's specification at FIG. 1 and page 8, line 6 to page 9, line 16. The photodetector 10 includes at least two detector elements 10A, 10B, 10C, 10D. See appellant's specification at FIG. 1 and page 8, lines 23-32. The phase forming unit 13 detects a phase difference between output signals of the photodetector 10. See appellant's specification at page 9, lines 2-4. The edge sequence detector 14 detects a sequence of edges of the output signals of the photodetector. See appellant's specification at page 9, lines 4-8. The signal blocking unit 15, in response to the edge sequence detector 14, blocks output signals of the phase forming unit 13, when an impermissible sequence of edges is detected. See appellant's specification at page 9, lines 8-16.

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Shiyuuichi does not describe or suggest an apparatus for reading from or writing to optical recording media including a photodetector having at least two detector elements, a phase forming unit for detecting a phase difference between output signals of the photodetector, an edge sequence detector for detecting a sequence of edges of the output signals of the photodetector and a signal blocking unit that, in response to the edge sequence detector, blocks output signals of the phase forming unit when an impermissible sequence of edges is detected. Rather, Shiyuuichi only teaches checking the timing sequence of a single signal for 3T and 4T signals and annulling the tracking signal when 3T and 4T signals with low signal-to-noise ratios are detected. Therefore, appellant's submit that claims 1-9 are not anticipated by Shiyuuichi.

Claims 10, 13 and 17

Appellant's claims 10, 13 and 17 disclose a method for determining a correct track error signal using a phase detection method. See appellant's specification at page 1, lines 7-11. The method includes checking a sequence of zero crossings whose phases are detected with regard to impermissible sequence. See appellant's specification at page 9, lines 6-10. Thereafter, the outputting of a phase value is prevented when the impermissible sequence is detected. See appellants' specification at page 9, lines 10-16.

Shiyuuichi does not describe or suggest a method for determining a correct track error signal using a phase detection method including the steps of checking a sequence of zero crossings whose phases are detected with regard to impermissible sequence and preventing the outputting of a phase value when the impermissible sequence is detected. Rather, Shiyuuichi only teaches checking the timing sequence of a single signal for 3T and 4T signals and annulling the tracking signal when 3T and 4T signals with low signal-to-noise ratios are detected. Therefore, appellant's submit that claims 10, 13 and 17 are not anticipated by Shiyuuichi.

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2.   Rejection of claims 1-3, 6, 9, 10 and 17 under 35 U. S. C. § 102(a) over
        Kuribayashi (U. S. 6,317,396).

                              <u>Claims 1-3, 6 and 9</u>

        Kuribayashi discloses a tracking error generating device. See Kuribayashi
at column 1, lines 5-8. In the tracking error generating device, evaluation target
signals processed from light receiving element output signals are individually
checked for amplitude or line width. See Kuribayashi at column 2, lines 48-67.

        In appellant's claims 1-3, 6 and 9, an apparatus is described for reading
from or writing to optical recording media. See appellant's specification at page 1,
lines 7-11. The apparatus includes a photodetector 10, a phase forming unit 13,
an edge sequence detector 14 and a signal blocking unit 15. See appellant's
specification at FIG. 1 and page 8, line 6 to page 9, line 16. The photodetector 10
includes at least two detector elements 10A, 10B, 10C, 10D. See appellant's
specification at FIG. 1 and page 8, lines 23-32. The phase forming unit 13
detects a phase difference between output signals of the photodetector 10. See
appellant's specification at page 9, lines 2-4. The edge sequence detector 14
detects a sequence of edges of the output signals of the photodetector. See
appellant's specification at page 9, lines 4-8. The signal blocking unit 15, in
response to the edge sequence detector 14, blocks output signals of the phase
forming unit 13, when an impermissible sequence of edges is detected. See
appellant's specification at page 9, lines 8-16.

        Kuribayashi does not describe or suggest an apparatus for reading from or
writing to optical recording media including a photodetector having at least two
detector elements, a phase forming unit for detecting a phase difference between
output signals of the photodetector, an edge sequence detector for detecting a
sequence of edges of the output signals of the photodetector and a signal
blocking unit that, in response to the edge sequence detector, blocks output
signals of the phase forming unit when an impermissible sequence of edges is

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detected. Rather, Kuribayashi teaches a completely different arrangement in which tracking error signals are detected based on evaluation target signals processed from light receiving element output signals that are individually checked for amplitude or line width. Therefore, appellant's submit that claims 1-3, 6 and 9 are not anticipated by Kuribayashi.

Claims 10 and 17

Appellant's claims 10 and 17 disclose a method for determining a correct track error signal using a phase detection method. See appellant's specification at page 1, lines 7-11. The method includes checking a sequence of zero crossings whose phases are detected with regard to impermissible sequence. See appellant's specification at page 9, lines 6-10. Thereafter, the outputting of a phase value is prevented when the impermissible sequence is detected. See appellants' specification at page 9, lines 10-16.

Kuribayashi does not describe or suggest a method for determining a correct track error signal using a phase detection method including the steps of checking a sequence of zero crossings whose phases are detected with regard to impermissible sequence and preventing the outputting of a phase value when the impermissible sequence is detected. Rather, Kuribayashi teaches a completely different method in which tracking error signals are detected based on evaluation target signals processed from light receiving element output signals that are individually checked for amplitude or line width. Therefore, appellant's submit that claims 10 and 17 are not anticipated by Kuribayashi.

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3.   Rejection of claims 11-12 under 35 U. S. C. § 103(a) over Shiyuuichi
      (JP 10-198981) in view of Kuribayashi (U. S. 6,317,396).

Claim 11

Shiyuuichi discloses a tracking signal detector. See Shiyuuichi in Abstract, Problem to be Solved, lines 1-3. The time sequence of a single signal is checked for 3T and 4T signals. See Shiyuuichi in Abstract, Solution, lines 1-7. The tracking signal is annulled when 3T and 4T signals with low signal-to-noise ratios are detected. See Shiyuuichi in Abstract, Solution, lines 7-10.

In appellant's claim 11, a method is disclosed for determining a correct track error signal using a phase detection method. See appellant's specification at page 1, lines 7-11. The method includes checking a sequence of zero crossings whose phases are detected with regard to impermissible sequence. See appellant's specification at page 9, lines 6-10. Thereafter, the outputting of a phase value is prevented when the impermissible sequence is detected. See appellants' specification at page 9, lines 10-16. The impermissible sequence is a sequence of more than two successive zero crossings of one of the signals without the occurrence of a zero crossing in another of the signals. See appellant's specification at page 4, lines 29-33.

Shiyuuichi does not describe or suggest a method for determining a correct track error signal using a phase detection method including the steps of checking a sequence of zero crossings whose phases are detected with regard to impermissible sequence and preventing the outputting of a phase value when the impermissible sequence is detected, where the impermissible sequence is a sequence of more than two successive zero crossings of one of the signals without the occurrence of a zero crossing in another of the signals. Rather, Shiyuuichi only teaches checking the timing sequence of a single signal for 3T and 4T signals and annulling the tracking signal when 3T and 4T signals with low

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signal-to-noise ratios are detected. Therefore, appellant's submit that claim 11
patentable over Shiyuuichi.

Kuribayashi discloses a tracking error generating device. See Kuribayashi
at column 1, lines 5-8. In the tracking error generating device, evaluation target
signals processed from light receiving element output signals are individually
checked for amplitude or line width. See Kuribayashi at column 2, lines 48-67.

Kuribayashi does not describe or suggest a method for determining a
correct track error signal using a phase detection method including the steps of
checking a sequence of zero crossings whose phases are detected with regard
to impermissible sequence and preventing the outputting of a phase value when
the impermissible sequence is detected, where the impermissible sequence is a
sequence of more than two successive zero crossings of one of the signals
without the occurrence of a zero crossing in another of the signals. Rather,
Kuribayashi teaches a completely different method in which tracking error signals
are detected based on evaluation target signals processed from light receiving
element output signals that are individually checked for amplitude or line width.
Therefore, appellant's submit that claim 11 patentable over Kuribayashi.

Further, since Shiyuuichi only teaches checking the timing sequence of a
single signal for 3T and 4T signals and annulling the tracking signal when 3T and
4T signals with low signal-to-noise ratios are detected and Kuribayashi only
teaches detecting tracking error signals based on evaluation target signals
processed from light receiving element output signals that are individually
checked for amplitude or line width, the combination of these references does not
describe or suggest applicant's arrangement recited in claim 11. In particular,
claim 11 recites a method for determining a correct track error signal using a
phase detection method including the steps of checking a sequence of zero
crossings whose phases are detected with regard to impermissible sequence
and preventing the outputting of a phase value when the impermissible sequence
is detected, where the impermissible sequence is a sequence of more than two
successive zero crossings of one of the signals without the occurrence of a zero

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crossing in another of the signals. Thus, claim 11 is not obvious over Shiyuuichi in view of Kuribayashi.

Claim 12

In appellant's claim 12, a method is disclosed for determining a correct track error signal using a phase detection method. See appellant's specification at page 1, lines 7-11. The method includes checking a sequence of zero crossings whose phases are detected with regard to impermissible sequence. See appellant's specification at page 9, lines 6-10. Thereafter, the outputting of a phase value is prevented when the impermissible sequence is detected. See appellants' specification at page 9, lines 10-16. The impermissible sequence is a sequence of more than one pair of zero crossings within a predetermined time period, a pair of zero crossings consisting of a zero crossing of one of the signals and a succeeding zero crossing of another one of the signals. See appellant's specification at page 5, lines 9-16.

Shiyuuichi does not describe or suggest a method for determining a correct track error signal using a phase detection method including the steps of checking a sequence of zero crossings whose phases are detected with regard to impermissible sequence and preventing the outputting of a phase value when the impermissible sequence is detected, where the impermissible sequence is a sequence of more than one pair of zero crossings within a predetermined time period, a pair of zero crossings consisting of a zero crossing of one of the signals and a succeeding zero crossing of another one of the signals. Rather, Shiyuuichi only teaches checking the timing sequence of a single signal for 3T and 4T signals and annulling the tracking signal when 3T and 4T signals with low signal-to-noise ratios are detected. Therefore, appellant's submit that claim 12 patentable over Shiyuuichi.

Kuribayashi does not describe or suggest a method for determining a correct track error signal using a phase detection method including the steps of

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checking a sequence of zero crossings whose phases are detected with regard to impermissible sequence and preventing the outputting of a phase value when the impermissible sequence is detected, where the impermissible sequence is a sequence of more than one pair of zero crossings within a predetermined time period, a pair of zero crossings consisting of a zero crossing of one of the signals and a succeeding zero crossing of another one of the signals. Rather, Kuribayashi teaches a completely different method in which tracking error signals are detected based on evaluation target signals processed from light receiving element output signals that are individually checked for amplitude or line width. Therefore, appellant's submit that claim 12 patentable over Kuribayashi.

Further, since Shiyuuichi only teaches checking the timing sequence of a single signal for 3T and 4T signals and annulling the tracking signal when 3T and 4T signals with low signal-to-noise ratios are detected and Kuribayashi only teaches detecting tracking error signals based on evaluation target signals processed from light receiving element output signals that are individually checked for amplitude or line width, the combination of these references does not describe or suggest applicant's arrangement recited in claim 12. In particular, claim 12 recites a method for determining a correct track error signal using a phase detection method including the steps of checking a sequence of zero crossings whose phases are detected with regard to impermissible sequence and preventing the outputting of a phase value when the impermissible sequence is detected, where the impermissible sequence is a sequence of more than one pair of zero crossings within a predetermined time period, a pair of zero crossings consisting of a zero crossing of one of the signals and a succeeding zero crossing of another one of the signals. Thus, claim 12 is not obvious over Shiyuuichi in view of Kuribayashi.

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4.   Rejection of claims 11-12 under 35 U. S. C. § 103(a) over Kuribayashi
      (U. S. 6,317,396) in view of Koji (JP 10-208262).

<u>Claim 11</u>

Kuribayashi discloses a tracking error generating device. See Kuribayashi
at column 1, lines 5-8. In the tracking error generating device, evaluation target
signals processed from light receiving element output signals are individually
checked for amplitude or line width. See Kuribayashi at column 2, lines 48-67.

In appellant's claim 11, a method is disclosed for determining a correct
track error signal using a phase detection method. See appellant's specification
at page 1, lines 7-11. The method includes checking a sequence of zero
crossings whose phases are detected with regard to impermissible sequence.
See appellant's specification at page 9, lines 6-10. Thereafter, the outputting of a
phase value is prevented when the impermissible sequence is detected. See
appellants' specification at page 9, lines 10-16. The impermissible sequence is a
sequence of more than two successive zero crossings of one of the signals
without the occurrence of a zero crossing in another of the signals. See
appellant's specification at page 4, lines 29-33.

Kuribayashi discloses a tracking error generating device. See Kuribayashi
at column 1, lines 5-8. In the tracking error generating device, evaluation target
signals processed from light receiving element output signals are individually
checked for amplitude or line width. See Kuribayashi at column 2, lines 48-67.
In appellant's claim 11, a method is disclosed for determining a correct track error
signal using a phase detection method. See appellant's specification at page 1,
lines 7-11. The method includes checking a sequence of zero crossings whose
phases are detected with regard to impermissible sequence. See appellant's
specification at page 9, lines 6-10. Thereafter, the outputting of a phase value is
prevented when the impermissible sequence is detected. See appellants'
specification at page 9, lines 10-16. The impermissible sequence is a sequence

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of more than two successive zero crossings of one of the signals without the occurrence of a zero crossing in another of the signals. See appellant's specification at page 4, lines 29-33.

Kuribayashi does not describe or suggest a method for determining a correct track error signal using a phase detection method including the steps of checking a sequence of zero crossings whose phases are detected with regard to impermissible sequence and preventing the outputting of a phase value when the impermissible sequence is detected, where the impermissible sequence is a sequence of more than two successive zero crossings of one of the signals without the occurrence of a zero crossing in another of the signals. Rather, Kuribayashi teaches a completely different method in which tracking error signals are detected based on evaluation target signals processed from light receiving element output signals that are individually checked for amplitude or line width. Therefore, appellant's submit that claim 11 patentable over Kuribayashi.

Koji describes a tracking signal detector. See Koji in Abstract, Problem to be Solved, line 1. The tracking error signal is detected based on whether a phase difference occurs within a prescribed time. See Koji in Abstract, Solution, lines 1-9.

Koji does not describe or suggest a method for determining a correct track error signal using a phase detection method including the steps of checking a sequence of zero crossings whose phases are detected with regard to impermissible sequence and preventing the outputting of a phase value when the impermissible sequence is detected, where the impermissible sequence is a sequence of more than two successive zero crossings of one of the signals without the occurrence of a zero crossing in another of the signals. Rather, Koji only teaches detecting a tracking error signal based on whether a phase difference occurs within a prescribed time. Therefore, appellant's submit that claim 11 patentable over Koji.

Further, since Kuribayashi only teaches detecting tracking error signals based on evaluation target signals processed from light receiving element output

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signals that are individually checked for amplitude or line width and Koji only
teaches detecting a tracking error signal based on whether a phase difference
occurs within a prescribed time, the combination of these references does not
describe or suggest applicant's arrangement recited in claim 11. In particular,
claim 11 recites a method for determining a correct track error signal using a
phase detection method including the steps of checking a sequence of zero
crossings whose phases are detected with regard to impermissible sequence
and preventing the outputting of a phase value when the impermissible sequence
is detected, where the impermissible sequence is a sequence of more than two
successive zero crossings of one of the signals without the occurrence of a zero
crossing in another of the signals. Thus, claim 11 is not obvious over Kuribayashi
in view of Koji.

Claim 12

        In appellant's claim 12, a method is disclosed for determining a correct
track error signal using a phase detection method. See appellant's specification
at page 1, lines 7-11. The method includes checking a sequence of zero
crossings whose phases are detected with regard to impermissible sequence.
See appellant's specification at page 9, lines 6-10. Thereafter, the outputting of a
phase value is prevented when the impermissible sequence is detected. See
appellants' specification at page 9, lines 10-16. The impermissible sequence is a
sequence of more than one pair of zero crossings within a predetermined time
period, a pair of zero crossings consisting of a zero crossing of one of the signals
and a succeeding zero crossing of another one of the signals. See appellant's
specification at page 5, lines 9-16.
        Kuribayashi does not describe or suggest a method for determining a
correct track error signal using a phase detection method including the steps of
checking a sequence of zero crossings whose phases are detected with regard
to impermissible sequence and preventing the outputting of a phase value when

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the impermissible sequence is detected, where the impermissible sequence is a sequence of more than one pair of zero crossings within a predetermined time period, a pair of zero crossings consisting of a zero crossing of one of the signals and a succeeding zero crossing of another one of the signals. Rather, Kuribayashi teaches a completely different method in which tracking error signals are detected based on evaluation target signals processed from light receiving element output signals that are individually checked for amplitude or line width. Therefore, appellant's submit that claim 12 patentable over Kuribayashi.

Koji does not describe or suggest a method for determining a correct track error signal using a phase detection method including the steps of checking a sequence of zero crossings whose phases are detected with regard to impermissible sequence and preventing the outputting of a phase value when the impermissible sequence is detected, where the impermissible sequence is a sequence of more than one pair of zero crossings within a predetermined time period, a pair of zero crossings consisting of a zero crossing of one of the signals and a succeeding zero crossing of another one of the signals. Rather, Koji only teaches detecting a tracking error signal based on whether a phase difference occurs within a prescribed time. Therefore, appellant's submit that claim 11 patentable over Koji.

Further, since Kuribayashi only teaches detecting tracking error signals based on evaluation target signals processed from light receiving element output signals that are individually checked for amplitude or line width and Koji only teaches detecting a tracking error signal based on whether a phase difference occurs within a prescribed time, the combination of these references does not describe or suggest applicant's arrangement recited in claim 12. In particular, claim 12 recites a method for determining a correct track error signal using a phase detection method including the steps of checking a sequence of zero crossings whose phases are detected with regard to impermissible sequence and preventing the outputting of a phase value when the impermissible sequence is detected, where the impermissible sequence is a sequence of more than one
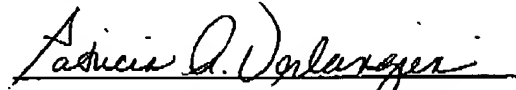
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pair of zero crossings within a predetermined time period, a pair of zero crossings consisting of a zero crossing of one of the signals and a succeeding zero crossing of another one of the signals. Thus, claim 12 is not obvious over Kuribayashi in view of Koji.

8. CONCLUSION

In view of the above, it is respectfully submitted that the rejection of claims 1-17 should be reversed.

Respectfully submitted,

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APPENDIX I - APPEALED CLAIMS

1.   An apparatus for reading from or writing to optical recording media, comprising:

a photodetector with at least two detector elements;

a phase forming unit for detecting a phase difference between output signals of the photodetector;

an edge sequence detector for detecting a sequence of edges of the output signals; and

a signal blocking unit for blocking an output signal of the phase forming unit when an impermissible sequence of edges is detected.

2.   The apparatus according to Claim 1, wherein the signal blocking unit blocks a signal which is derived from the output signal of the phase forming unit or is used to form the output signal.

3.   The apparatus according to Claim 2, further comprising diagonal summation signal forming units having inputs connected to the detector elements of the photodetector and providing the output signal.

4.   The apparatus according to Claim 3, further comprising edge detectors and phase angle detectors, to which the output signals are fed and whose outputs are connected to the phase forming unit and to the edge sequence detector.

5.   The apparatus according to Claim 2, further comprising edge detectors and phase angle detectors, to which the output signals are fed and whose outputs are connected to the phase forming units and to the edge sequence detector.

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6.   The apparatus according to Claim 1, further comprising diagonal
summation signal forming units having inputs connected to the detector elements
of the photodetector and providing the output signal.

7.   The apparatus according to Claim 1, further comprising edge detectors
and phase angle detectors, to which the output signals are fed and whose
outputs are connected to the phase forming unit and to the edge sequence
detector.

8.   The apparatus according to Claim 1, wherein the phase forming unit and
the edge sequence detector are integrated.

9.   The apparatus according to Claim 1, further comprising a fault indicator
connected to an output of the edge sequence detector.

10.   A method for determining a correct track error signal utilizing a phase
detection method, comprising the steps of:
         checking a sequence of zero crossings whose phases are detected
with regard to impermissible sequences; and
         preventing the outputting of a phase value when an impermissible
sequence is detected.

11.   The method of Claim 10, wherein a sequence of more than two
successive zero crossings of one of the signals without the occurrence of a zero
crossing in another of the signals is an impermissible sequence.

12.   The method of Claim 10, wherein a sequence of more than one pair of
zero crossings within a predetermined time period, a pair of zero crossings
consisting of a zero crossing of one of the signals and a succeeding zero
crossing of another one of the signals, is an impermissible sequence.

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13.   The method of Claim 10, wherein an error indication signal is generated as a function of the accumulation of impermissible sequences.

14.   The method of Claim 10, wherein the signals are evaluated in a predetermined clock cycle, a zero crossing being present if one of two successive values of the signal lies above, and the other of said values lies below, a reference value, and the temporal positions of the zero crossing is interpolated using these two values.

15.   The method of Claim 14, wherein the phase value between a zero crossing of one signal of the signals and a zero crossing of another of the signals is determined from the respective interpolated temporal position and the number of clock cycles lying between the zero crossings.

16.   The method of Claim 10, further comprising the step of extrapolating the track error signal in the event of an impermissible sequence.

17.   The method of Claim 10, wherein the phase detection method is a differential phase detection method, the signals to be compared being the diagonal summation signals.

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